DOCUMENT RESUME

ED 266 176 TM 860 120

AUTHOR	Klein, Thomas W.
TITLE	Architecture as a Metaphor for Development of Culturally Adapted Minority Education Programs. Final Report of the Regional Study Award Project.
INSTITUTION	Northwest Regional Educational Lab., Portland, OR. Center for Performance Assessment.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC.
PUB DATE	Nov 85
CONTRACT	400-83-0005
NOTE	12p.
PUB TYPE	Viewpoints (120)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Architecture; Cultural Context; *Design; Elementary Secondary Education; *Metaphors; Minority Groups; Program Design; *Program Development
IDENTIFIERS	Contextual Analysis

ABSTRACT

The use of metaphor offers considerable promise within scientific disciplines for encouraging creative thinking, drawing attention to important concepts or principles in a discipline, and developing new methodologies. Ferguson's description of architectural practice as a metaphor for the development of social programs is used to demonstrate these uses of metaphor through a comparison of architecture to the development of culturally adapted minority education programs. Architecture's design process, which seeks to understand context through analysis and to create a form appropriate to that context through synthesis, parallels educational program development. Judging the success of the design process through the analysis of fit between the form and its context, extends the metaphor to program evaluation. Like architecture, educational programs have functional-practical, milieu-creating and symbolic purpose. As in architectural building tasks, minority educational program development must analyze the cultural contexts, seek solutions to a series of functional or psychological needs, view the resulting form as one solution among many, and evaluate the fit. (BS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

TM

ARCHITECTURE AS A METAPHOR FOR DEVELOPMENT OF CULTURALLY ADAPTED MINORITY EDUCATION PROGRAMS

ED266617

Final Report of the Regional Study Award Project

Thomas W. Klein, Ph.D.
Psychologist/Evaluator
Center for the Development of Early Education
Kamahameha Schools
Honolulu, Hawaii

John Mahaffy, Director
Center for Professional Development
Northwest Regional Educational Laboratory
300 S. W. Sixth Avenue
Portland, Oregon

November 1985

TM 860 120

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

The work upon which this publication is based was performed pursuant to Contract No. 400-83-0005 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

INTRODUCTION

In the progress of science or science-related disciplines, the maintenance of creativity is often problematic. Patterns of thinking and the relationships which exist among concepts and processes can become so habitual that efforts to adopt alternative views become futile. This condition may persist even when the restrictions produced by those patterns or relationships preclude constructive action.

Metaphor and Creative Thinking

One widely suggested technique for overcomming such an impasse is brainstorming. However, my limited experience in attempting to employ this technique indicates that a suggestion to brainstorm can produce the same effect as a suggestion for a prolonged period of silent meditation. An alternative, which may capitalize on the propensity of scientists for critical thinking, is the use of mataphor. A metaphor can provide a structure for critical thinking which permits, even encourages, new perspectives through exploration of the implications of the metaphor being considered.

As an example, we might consider the metaphor "Ships plow the oceans." I find it difficult, on hearing that example, to supress the vivid visual image of the bow wake of a ship. This, to me, is the strongest association between ships and plows. However, further exploration of the metaphor could lead to consideration of the ways in which both ships and plows contribute to the human food supply or the contrast between the ship's function of transportation and the plow's function of turning the soil. Once into the process of metaphorical analysis, it does not seem a large leap to consider the materials from which both plows and ships are made. Wood and steel are, of course, common to them both. In the context of metaphorical analysis, the urge to question the utility of fiberglass or concrete as possible materials for building a plow does not seem out of place.

Metaphor and Essential Principles

The analysis of metaphors for a discipline or process may also provide an effective means of reiterating and a stimulus for additional consideration of fundamental principles. For example, the practice of law has been proposed as a metaphor for evaluation and rules of evidence are a key element of trial law. One function of these rules is to help insure that the nature of the evidence presented is appropriate to the decision maker's ability to understand and use the information appropriately. Thus, some types of evidence which are allowed when a judge is hearing a case are not permissable in a jury trial. Consideration of this aspect of the rules of evidence in law may serve to reawaken our awareness of the necessity to present results in terms which are readily understood by our audience and are unlikely to be misinterpreted.

Watercolor painting, as discussed by Gephart (1981), provides another illustration of this function of metaphor. Through his discussion of the water color artist's concern with the degree of wetness of the paper, Gephart makes the point that the practitioner must understand the tools at his disposal and use them appropriately if he is to produce the desired, the most salient, effect. This point is equally important in the social sciences, where the choice of method or measure can effectively alter the question addressed by the inquiry, possibly diverting it from the question of interest or importance.

Many of the most meaningful questions which might be addressed in the practice of educational evaluation are simply not amenable to statement in terms which might allow them to be tested by a true experiment with random assignment or by a quasi-experimental design. However, rephrasing them to fit a preferred method is not likely to solve the problem. Rather, the question will be changed and the final outcome may have little value for the decision to be made. Evaluators must accept that the answers to those questions most pertinent to the decision to be informed by the evaluation might only be found through data which lack traditional levels of scientific rigor. It may well be desirable to ease our requirements for rigor in order to maximize validity.

Owens and Owen, in their treatment of the "Point of View" of a discipline, suggest that the goal of evaluation is the establishment of social justice. It seems fair to suggest that this view is not universally shared by all members of the evaluation profession. In fact, the desirability of incorporating either the advocative or the adversarial character of trial procedures into the point of view of the evaluation profession are issues which would prompt considerable debate. Concern with these issues is probably as old as the evaluation profession itself. To the extent that there is no single point of view which is universally accepted by the practitioners of evaluation, the use of the metaphor calls attention to the need to attend to these issues both in developing our individual approaches to evaluation and in presenting results to our clients. Methods which produce results which are concordant with the aims of the evaluator-advocate or his/her client are much less likely to receive the careful scrutiny routinely accorded those methods or measures which fail to confirm the favored hypothesis.

Metaphor and Methodology

One other use of metaphorical analysis which I would like to consider is its application in the development of new methods. Smith (1981) has made a strong case for this approach and he provides a variety of examples of the application of metaphorical analysis to various levels of methodological discourse. Using a broad definition of methodology, these examples range from the application of metaphor to consideration of the point of view of a discipline to its use in the development of specific techniques of inquiry. Guba (1981a, 1981b) presents an extensive development of investigative reporting as a metaphor for evaluation, including suggestions for the application of specific methods of inquiry from that field. That profession provides a strong metaphor, not only through its methods of inquiry but also in its consideration of value and its facilitation of social change. A similar development of law as a

metaphor for evaluation by Owens and Owen (1981) suggests metaphors at each level of methodological discourse defined by Smith and proposes other parallels. The value of the legal metaphor, however, may reside as much in the contrasts between the two professions as in their similarities. For example, rules of evidence in law generally deal with limitations on the evidence allowed in various types of proceedings. However, this metaphor may be useful in raising the general issue of limits on the types of data considered acceptable even though the current need in evaluation may be the expansion of the variety of data considered rather than its restriction.

ARCHITECTURE AS A METAPHOR FOR PROGRAM DEVELOPMENT

Ferguson (1981) provides a very useful description of the practice of architecture, which forms a strong metaphor for the emperically based development of social programs. Architecture's design process, which seeks to understand context through analysis and to create a form appropriate to that context through synthesis, provides a direct parallel to the development of a social program through research. The judgement of success of the design process, based on the analysis of fit between the form and its context, extends the metaphor to the evaluation of the resulting program. The strength of this metaphor is such that through substitution of a limited number of key words - e.g. program for form or structure, resources for materials, programmatic for physical - the chapter might well be understood as observations on social program development.

Architecture and Education

Architecture seems a particularly promising metaphor for educational programs because of the universal requirements of society for both shelter and education. A society must educate its members to survive. Whether this education takes place within the family, informally within the community or in places and at times formally set aside for educational activities carried out by specialists will largely be determined by the cultural history, the complexity and the degree of individual specialization in the society. The educational system which exists will be the product of the evolution of the culture and will represent the resolution of a variety of its needs.

As an illustration of the application of metaphor to a social program I will use education as the program and culture as the context for program development. The organization of what follows will generally parallel that of Ferguson's chapter should the reader wish to compare the developments side-by-side.

The Purposes of Architecture and Education

Ferguson discusses three purposes of architecture stated by Norberg-Schulz (1973): functional-practical, milieu-creating, and symbolizing. In the discussion of the functional-practical, she introduces the concept of vernacular architecture which she defines as the architecture of noncomplex cultures. As suggested above, each culture might also be seen as having a vernacular educational system. In

its application to education, the term vernacular might be used in its more general sense: of, relating to, or characteristic of a period, place or group. For the purposes of this discussion, I will try to maintain this more general sense, where possible.

In the context of the architecture metaphor, the following observation of Williams and Williams (1974), relative to shelter, seems apt when applied to education.

> There is little that is arbitrary in indigenous peoples' lives; decisions are dicitated by tradition, the pressures of environment, and the economy of materials.

Indeed tradition, social and political pressures, and considerations of effeciency and effectiveness largely prescribe the requirement for and the predominant mode of education in a culture. When cultures meet, each brings with it a vernacular educational system and that of the more complex, i.e. technologically advanced, culture has generally been seen as more desirable or necessary and is adopted. Social and political considerations generally hold sway in determining the extent to which one or the other's cultural values or processes are reflected in the system adopted. Historically, it seems that few accommodations have been made to the less complex culture; despite the recognition that the educational processes which are embodied in that culture are far from arbitrary.

Educational systems obviously serve a milieu-creating function similar to architecture. The program, like the structure, defines a domain different from free nature. The domain is also differentiated from those of other programs by its educational purpose. The milieu created by the program should not only allow but also promote that purpose.

In discussing cultural symbolization as a purpose of architecture, Ferguson points to Rapaport's (1969) emphasis on the importance of sociocultural influences on form in architecture. The parallel with education as the representation of collective cultural values is evident. We do our best to insure that that which we deem most important in our culture is passed on. Further, the process of education reflects such sociocultural values as the equality of individuals and deference to the speaker.

Product Resolution: The Building Task

The building task for culturally adapted educational programs may be no less formidable than that for a complex physical structure. Appropriate elements must be brought together and assembled into an integrated whole. In architecture, the most appropriate materials may not be available locally. In education, totally unfamiliar skills may have to be taught to available teachers until their practice becomes almost automatic or new teachers may have to be brought in. The product required by the architect may not even exist and may have to be synthesized. A parallel in education is provided by the case where a model for the role of a classroom teacher does not exist in the culture.

Thus, an appropriate role for the adult who will teach in a classroom would have to be synthesized anew. Even the rules or procedures for assembling the elements may have to be developed either in architecture or in education.

Architectural Design Elements and Processes

The design elements and processes of architecture were briefly presented above. A more detailed consideration of those elements and processes demonstrates the strength of the architecture metaphor.

Context

Ferguson defines context as anything which makes demands on the form. "The context is that which exists, that which is given, or that which defines the boundaries of the solution." She further states that "the context defines the problem" (1981). Thus, the cultural context in minority education is twofold. Typically, the aim of minority education is to prepare members of the minority culture to function productively in a culture which is not their own. Thus, both the minority and the second culture need to be considered. The second culture may be seen as defining the content of instruction, whether that be academic skills or attitudes, and providing a skeletal structure for development of a process for presenting that content. The analysis of the minority culture should yield ideas for culturally apporpriate modifications of the foreign curriculum. Both contexts require analysis of both their implications for educational practice and the restrictions they place on the types of adaptations possible.

For the sake of illustrating the utility of metaphor, we will limit the discussion of program content to reading. However, even when limited to this single subject, the minority culture presents a variety of questions which might be profitably addressed in our search for effective methods. Examples include: a) From whom in the culture do children typically learn? b) What is the relative contribution to instruction of parents, peers, or specialists? c) What is the nature of the relationship between the teacher and the learner? d) To what extent does instruction take place through discourse or through example? These are but a few characteristics of the educational milieu of the minority culture which might merit attention. But, the answer to each may have important implications for the design of an effective minority educational program.

In architecture it seems obvious that the same milieu is not necessarily appropriate for all organizations with the same general purpose. Individual companies have distinctive cultures and the culture of successful companies is a recent topic of extensive study by the business community. A single architectural design would not be expected to equally facilitate the efforts of companies which differ markedly in culture.

Educators seem slow to recognize the same principal when applied to their discipline. When attempts to incorporate a minority population into a foreign educational system proves ineffective, the usual response has been to characterize the minority population as deficient. This

assumption of deficiency then leads to a variety of "remedial" efforts to acculturate the minority group. When increased efforts in elementary schools fail, the model for remediation of deficiency suggests concentrated efforts in preschool. If preschool intervention is unsuccessful, parent-infant programs are sought. The logic seems to be that of doing the same thing, usually either more of or earlier, but expecting different results. The aim seems to be that of turning, for example, little Hawaiians into either little Caucasians or little Japanese. The idea that a single structure/program need not be expected to be equally effective in different cultural contexts seems slow in gaining acceptance.

In the contexts of both biology and culture, difference does not equate to deficit. In fact, differences (variation) must exist in both areas as raw material for the inevitable evolution of each or the species or culture will not survive. Differences are available for exploitation in the interest of progress in education, if we are willing to make the effort to support the evolution of our programs.

Design

Ferguson considers design in architecture to be the process through which one seeks a physical solution to a series of functional or psychological needs. Through substitution of the word programmatic for physical, we have a working definition of design in education. In minority education, the functional needs may be seen as learning the skills necessary to meet the demands of the majority culture. Among the psychological needs in our example is the need for a process of education which: a) capitalizes on the skills which the minority child brings to the educational situation; b) developes those skills through culturally appropriate means (altering the school to fit the child rather than vise-versa) and, as a result, c) promotes the child's acquisition of the skills necessary to achieve in the foreign culture.

In constructing such a program, it is as essential for the researcher as it is for the architect to "think in wholes but work in a linear fashion" (Ferguson, 1981). As in architecture, the educational researcher has rather wide latitude within the constraints imposed by the context. He may choose to pay attention to the client's stated desires or may choose to emphasize a personal concern or pursue a personal line of investigation. Only the stated overall goals of the program and the constraints provided by context provide direction for and checks on the architect's work.

As stated above, relative to evaluation, a rigid dedication to a single method can redefine the question which is actually addressed. Similarly, excessive reliance on or attention to a single instructional element can effectively alter the intent of an instructional program. For example, exercises in critical thinking may prove useful in promoting the appreciation of text and reading skills. However, overemphasis on this one element could effectively redirect the goal of an educational program away from reading and toward critical thinking as a skill in its own right. Similarly, a comprehension emphasis may prove a more effective focus for reading instruction than phonics, when working in a

minority culture. However, the fact that phonics has limited utility as a primary mode for instruction does not imply that it should be effectively eliminated from consideration as a necessary element of an effective curriculum. Continued attention to the overall purpose of the structure/program is a necessity if the intended function is to be realized.

The necessity of proceeding in a linear fashion is also essential to educational program development. The architect's holistic concept is not sufficient for the structure to be realized. The elements of the form and the way in which they are to be combined must be understood and described. Similarly, statement of, and appreciation for, the elements of a culture to be incorporated into a curriculum does not insure that the desired result will be produced. The elements of the program must be systematically described and instructions for their implementation provided. The failure to faithfully implement the finished product not only threatens to collapse the structure, at least relative to the anticipated gains, but may delay the search for alternatives through the illusion that an effective program is already in place.

As in architecture, the product resolution of an educational program is a gigantic balancing act which seeks to adequately serve multiple functions while incorporating the maximum number of desirable features. Not all cultural inconsistencies will permit resolution. Thus, the program developer must be able to identify those problematic areas in which solutions may be sought.

Form

In architecture, the resultant form is not seen as "the" solution to the problem defined by the context, but rather one solution among many. The same is undoubtedly true of an educational program. Not every teacher can be expected to benefit from training in its methods. Some teachers will simply not be able to learn to effectively present the program while others will achieve greater success with alternative, and occassionally apparently contradictory, methods. The program is a hypothesized solution to the problem. The test of that hypothesis is in its application and the results it produces relative to its stated goals.

Fit

Fit is the architectural concept which specifies evaluation. Ferguson defines it as the dimension of congruence between the context and the form, the functional description of acceptability. Summative program evaluation is the context for the judgement of fit of the culturally adapted minority education program.

An Apparent Contrast

One apparent contrast suggested by the architecture metaphor is between the permanence of the architectural structure and the dynamic nature of educational programs. This aspect of the metaphor might prove fruitful in stimulating useful discussion on the necessity and/or desirability of change in an educational program. If the living units of a large hotel are made the metaphorical object in the discussion, then the permanence of the structure is highlighted, relieved only by the

connection of some adjacent rooms by doors which may be unlocked to form a suite. On the other hand, if you focus on the hotel's ballrooms and meeting rooms, most have a variety of movable walls or partitions which are useful in tailoring the space to its intended use. The question of the flexibility in the use of space is also a major concern to the architect designing a new office building.

In considering this contrast from the standpoint of educational practice, it would seem desirable to minimize the required structure, retaining maximal flexibility for tailoring the program to the specific needs of the individual school or classroom. However, curricula are complex structures and the direct contributions of individual elements, much less those of complex interactions, are seldom known or understood. The limits on the degree to which a program is amenable to local adaptation may only be discoverable when that program ceases to produce its superior results. Hopefully, at that point in time, the details of the previously successful implementation will still be recoverable.

SUMMARY

The use of maeaphor seems to offer considerable promise within scientific disciplines for encouraging creative thinking, drawing attention to important concepts or principles in a discipline and as a source of new methods. Each of these functions has been demonstrated through the consideration of architecture as a metaphor for for the development of culturally adapted minority education programs.

Probably no metaphor is ever fully developed. The limits of metaphorical analysis are most likely determined by the extent of our knowledge of the metaphor rather that the subject or discipline to which it is applied. However, metaphor can serve a useful function even though our knowledge of it is limited or even quite imperfect. Even weak metaphors can serve to help reveal salient facts or help us to restructure our thinking about an area in such a way that our understanding is increased.

REFERENCES

Ferguson, G. Architecture. In Smith, N. L. Metaphors for evaluation: Sources of new methods. Beverly Hills: Sage, 1981.

Gephart, W. J. Watercolor painting. In Smith, N. L. Metaphors for evaluation: Sources of new methods. Beverly Hills: Sage, 1981.

Guba, E. G. Investigative reporting. In Smith, N. L. Metaphors for evaluation: Sources of new methods. Beverly Hills: Sage, 1981(a).

Guba, E. G. Investigative journalism. In Smith, N. L. New techniques for evaluation. Beverly Hills: Sage, 1981(b).

Norberg-Schulz, C. Intensions in architecture. Cambridge: MIT Press, 1973.

Owens, T.H. and Owen, T. H. Law. In Smith, N. L. Metaphors for evaluation: Sources of new methods. Beverly Hills: Sage, 1981.

Smith, N. L. Metaphors for evaluation: Sources of new methods. Beverly Hills: Sage, 1981.

Williams, C. and Williams, C. Craftsmen of necessity. New York: Random House, 1974.